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A Comparative Analysis of Blind and Sighted Users' Acceptance of Online Music Stores

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ABSTRACT: Online music stores have become popular sites to visit now that iPods, MP3 players, and music-ready mobile phones have proliferated society. These sites and their products would appear to be a natural resource for blind users. The number of visually impaired users is growing. Combine that with their large disposable income and companies would be wise to pay attention to this group. Despite these facts, little work has been done to look at blind user behavior within the context of the Web. This study takes a well-validated acceptance model, the Technology Acceptance Model, and tests it using both a blind and sighted user population.

The number of people with disabilities, particularly those with visual impairments, is growing as Baby Boomers age. Approximately, 16.5 million people over the age of 45 have a visual impairment of some sort or another (Lighthouse, 2011). As the population ages, the need to address inaccessible online resources grows. Those with visual impairments often feel isolated and use the Web as a means of connecting with others, making purchases, and gaining information within the comfort of their home. Over 135 million people worldwide (World Health Organization, 2008) and 3.5 million in the U.S. (Masson, 2006) have low vision.

Providing accessible websites, which allow people with disabilities to use them, requires that users with and without disabilities be able to "perceive, understand, navigate and interact" (W3C, 2008) with the information contained on the site. Because the Web is so visual, information is often conveyed using images along with text through a graphical user interface (GUI). However, this type of information presentation is often difficult for users with disabilities, in particular those who are blind, to use. Blind users require assistive technologies, such as screen readers, to access information contained on websites. In order for them to do so, the sites must present information in a manner that allows the information to be read by the screen reader to the user in an understandable manner. As previous research reveals, however, most websites are not supportive of these technologies and thus are inaccessible to those with disabilities, especially the blind (Loiacono, 2004; Loiacono et al., 2005). We employed TAM, a derivative of the Theory of Reasoned Action, to investigate individuals' reactions towards technology adoption (Davis, 1989; Davis and Kottemann, 1995; Morris and Dillon, 1997; Szajna, 1996; Venkatesh, 1999; Venkatesh and Davis, 2000; Venkatesh et al., 2003).

We proposed three hypotheses (see Table 1) and expected that TAM would hold for blind users as well as sighted users. While blind users may require additional assistive technologies to access websites, it is believed that they too are likely to accept a website only if it is determined to be easy to use and useful to them. Thus, we predicted that all of the TAM relationships would hold for both sighted and blind populations. We collected data from 12 sighted and 6 blind people. All subjects had experience using the Web and were voluntary participants in the study. Of the 18 subjects included in the study, 12 were female. Their ages ranged from 19 to 53 with a mean age of 29 years. The results reveal that all hypotheses were supported. What is interesting is that though TAM held for both user groups, the relationship between the factors was significantly different for each. For sighted users ease of use had a greater direct influence on their decision to reuse than blind users did. Blind users' perceptions of ease of use had an indirect influence on their behavioral intention via perceived usefulness. Further, blind users appeared to put more weight on their perception of a site's usefulness when deciding to use it than sighted users did. This may be partially due to its moderation of blind users' perceived ease of use.

Table 1: Hypotheses Support

Hypotheses	Z-score (p-value)
H1: Perceived ease of use for blind users will impact perceived usefulness significantly different than it will for sighted users.	8.57 (p<.001)
H2: Perceived ease of use for blind users will impact acceptance (behavioral intention to use) significantly different than it will for sighted users.	6.48 (p<.001)
H3: Perceived usefulness for blind users will impact acceptance (behavioral intention to use) significantly different than it will for sighted users.	9.83 (p<.001)